

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: December 11, 1996  
Date Received: December 5, 1996  
Project: Metro Grab, PO #M55440  
Date Samples Extracted: December 9, 1996  
Date Extracts Analyzed: December 9, 1996

**RESULTS FROM THE ANALYSIS OF THE WATER SAMPLE  
FOR CHROMIUM, COPPER, NICKEL, AND ZINC**

**USING METHOD 6010**

**Samples Processed Using Method 3005A**

Results Reported as mg/L (ppm)

<u>Sample ID</u>	<u>Chromium</u>	<u>Copper</u>	<u>Nickel</u>	<u>Zinc</u>
M55440	0.51	0.85	0.73	0.22
Method Blank	<0.05	<0.05	<0.05	<0.05

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**QUALITY ASSURANCE RESULTS  
FOR TOTAL METALS BY  
INDUCTIVELY COUPLED PLASMA (ICP)  
(METHOD 6010)**

Laboratory Code: 74438 (Duplicate)

<u>Analyte:</u>	<u>Reporting Units</u>	<u>Sample Result</u>	<u>Duplicate Result</u>	<u>Relative Percent Difference</u>	<u>Acceptance Criteria</u>
Chromium	mg/L (ppm)	0.51	0.49	4	0-20
Copper	mg/L (ppm)	0.85	0.79	7	0-20
Nickel	mg/L (ppm)	0.73	0.71	3	0-20
Zinc	mg/L (ppm)	0.22	0.21	5a	0-20

Laboratory Code: 74438 (Matrix Spike)

<u>Analyte:</u>	<u>Reporting Units</u>	<u>Spike Level</u>	<u>Sample Result</u>	<u>% Recovery</u>		<u>Acceptance Criteria</u>	<u>Relative Percent Difference</u>
				<u>MS</u>	<u>MSD</u>		
Chromium	mg/L (ppm)	5	0.51	93	90	80-120	3
Copper	mg/L (ppm)	5	0.85	91	93	80-120	2
Nickel	mg/L (ppm)	10	0.73	93	88	80-120	6
Zinc	mg/L (ppm)	5	0.22	96	92	80-120	4

Laboratory Code: Spike Blank

<u>Analyte:</u>	<u>Reporting Units</u>	<u>Spike Level</u>	<u>% Recovery</u>		<u>Acceptance Criteria</u>	<u>Relative Percent Difference</u>
			<u>MS</u>	<u>MSD</u>		
Chromium	mg/L (ppm)	5	92	92	80-120	0
Copper	mg/L (ppm)	5	94	96	80-120	2
Nickel	mg/L (ppm)	10	89	96	80-120	8
Zinc	mg/L (ppm)	5	90	95	80-120	5

a - The analyte was detected at a level less than five times the detection limit. The RPD results may not provide reliable information on the variability of the analysis.



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.  
Beth M. Albertson, M.S.  
Bradley T. Benson  
Kelley D. Wilt

3012 16th Avenue West  
Seattle, WA 98119-2029  
TEL: (206) 285-8282  
FAX: (206) 283-5044

December 11, 1996

INVOICE # 96ACU1211-1  
DUPLICATE COPY

Accounts Payable  
Alaskan Copper Works  
628 South Hanford  
Seattle, WA 98134

RE: Project Metro Grab, PO #M55440: Results of testing requested by Gerry Thompson, Project Manager for material submitted on December 5, 1996.

1 water sample analyzed for  
Chromium, Copper, Nickel, and Zinc  
using Method 6010 @ \$65 per sample

\$ 65.00

Amount Due .....

\$ 65.00



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December 11, 1996

Gerry Thompson, Project Manager  
Alaskan Copper Works  
628 South Hanford  
Seattle, WA 98134

Dear Mr. Thompson:

Included are the results from the testing of material submitted on December 5, 1996 from your Metro Grab, PO #M55440 project.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Kurt Johnson  
Chemist

keh  
Enclosures  
ACU1211R.DOC